

**SUPPORT DOCUMENT 000085-0**

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**for the Air Operating Permit issued to**

**Simpson Tacoma Kraft Company, LLC**

**801 Portland Avenue**

**Tacoma, Washington 98421**

State of Washington  
DEPARTMENT OF ECOLOGY  
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## TABLE OF CONTENTS

INTRODUCTION .....	3
STATEMENT OF BASIS.....	3
I. Assuring Compliance With All Applicable Federal Requirements.....	3
A. Recovery furnace 4 - federally enforceable limits .....	4
B. Lime Kilns 1 & 2 - federally enforceable limits .....	5
C. Smelt Tanks 4E & 4W - federally enforceable limits .....	5
D. Power Boiler 6 - federally enforceable limits.....	6
E. Power Boiler 7 - federally enforceable limits .....	6
F. Causticizer Slaker Vent - federally enforceable limits .....	7
G. State only requirement – no federally enforceable limits .....	7
H. Industrial Stack Sources - federally enforceable limits .....	7
I. Compliance Assurance Monitoring (CAM) - federally enforceable limits.....	7
J - O. MACT Requirements - federally enforceable limits .....	7
Facility-Wide General Requirements.....	7
II. Insignificant Emission Units .....	8
III. Regulatory Orders .....	8
APPENDIX A - ACRONYMS USED IN THE SUPPORT DOCUMENT .....	9
APPENDIX B - RESPONSE TO COMMENTS .....	10

## **INTRODUCTION**

This Air Operating Permit (AOP) Support Document fulfills the operating permit rule "Statement of Basis" requirement and explains particular portions of the AOP for the Simpson Tacoma Kraft Company (Simpson). Note: A list of acronyms used in this Support Document is included in Appendix A.

This document is not part of the Simpson AOP. Nothing in this document is enforceable against the permittee, unless otherwise made enforceable by permit or order.

The Simpson mill is located along Commencement Bay in Tacoma, WA. The mill produces virgin pulp using the kraft process and recycle pulp from old corrugated cardboard (OCC). Production is approximately 1300 air dried unbleached tons/day (ADUT/D). A portion of the pulp is bleached at the on site bleach plant. Principal emission sources at the mill include recovery furnace 4, smelt tanks 4E & 4W, lime kilns 1 & 2, and power boilers 6 & 7.

## **STATEMENT OF BASIS**

A statement is required identifying the legal and factual basis for permit conditions when a draft AOP is issued [WAC 173-401-700(8)]. In the AOP, the applicable statutory or regulatory provisions are identified as applicable requirements in tables or are enclosed in brackets.

### **I. Assuring Compliance With All Applicable Federal Requirements**

The AOP is a compilation of applicable federal requirements and applicable state-only requirements. State-only requirements are clearly identified in the AOP and are not federally enforceable. Further discussion in the support document is limited to applicable federal requirements.

The AOP includes limits, monitoring and reporting, and applicable requirements. Some emission points have more than one limit and/or applicable requirement for a parameter. The multiple limits are usually based on two or more applicable requirements. Multiple limits are generally listed in order from most stringent to least stringent in a single permit condition in the AOP. Applicable requirements may include federal regulations, state regulations, Regulatory Orders, and Prevention of Significant Deterioration (PSD) Permits. Regulatory Orders in effect at Simpson include:

- Order No. 1916-AQ05,
- Order No. DE 01AQIS-3114,
- Order No. DE 99AQIS-94,
- Amendment 1 to Order No. DE 97AQ-I004,
- Amendment of Order No. DE 97AQ-I004,
- Order No. DE 97AQ-I004, and
- Agreed Order No. DE 95-AQI006.

A copy of each Regulatory Order in effect at Simpson is included in Appendix F of the AOP. There are no PSD permits in effect at Simpson.

Monitoring requirements are generally specified in Regulatory Orders and PSD Permits. Also, some monitoring and reporting requirements are specified in regulations. In such cases, the monitoring and reporting required by applicable requirements are included in the AOP. When absent from the applicable requirements, monitoring requirements are assigned in the AOP.

Best professional judgment is applied after considering historical performance along with expected frequency and magnitude of potential exceedences. The monitoring program strives to assure compliance with limits as required by the AOP program.

Direct measure is usually the specified monitoring in the absence of regulatory requirements. Direct measure is preferred due to its accuracy. When direct measure is difficult or impossible, such as opacity measurement of wet stacks, an indirect surrogate parameter is specified.

In some cases, frequency of monitoring issues may necessitate relying on periodic direct source testing and frequent indirect monitoring using surrogate parameters. Out-of-compliance surrogate measurements require corrective action. Failure to take proper corrective action constitutes noncompliance with good operation and maintenance requirements [WAC 173-405-040(10)] and possible noncompliance with the underlying requirement.

The draft AOP is a renewal of an existing permit. Major items added to the AOP as part of the renewal include:

- Order No. 1916-AQ05 making minor administrative changes to prior orders.
- MACT I requirements [40 CFR Part 63, Subpart S],
- Order No. DE 01AQIS-3114 concerning modification of recovery furnace #4,
- Order No. DE 99AQIS-94 concerning modification of recovery furnace #4,
- Compliance Assurance Monitoring (CAM) requirements [40 CFR Part 64], and
- MACT II requirements [40 CFR Part 63, Subpart MM].

Specific monitoring requirements for federally enforceable limits of principal emission sources at Simpson are discussed in this Support Document. Limits and applicable requirements are included in the AOP.

#### **A. Recovery furnace 4 - federally enforceable limits**

Emission controls at recovery furnace 4 include an electrostatic precipitator (ESP) for particulate control and operational practices to control other emissions. The stack is equipped with continuous emission monitoring system (CEMS) units to measure sulfur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), and total reduced sulfides (TRS) emissions. Also, a continuous opacity monitoring system (COMS) on the stack measures opacity. Monitoring to assure compliance with specific limits includes:

- A.1 Particulate limit compliance is monitored monthly with a source test. Provision for frequency reduction to quarterly is made if emissions are <75% of the limit for six consecutive months. Less frequent source testing is allowed only as long as source tests continue to demonstrate emissions are <75% of the limit. Compliance assurance monitoring (CAM) is required by 40 CFR Part 64 for particulate at this unit. Compliance with the hazardous air pollutants (HAPS) monitoring requirement discussed in section A.8 of this Support Document satisfies the CAM requirement.
- A.2 SO<sub>2</sub> limit compliance with the 30 day rolling average limit is calculated with CEMS data. The highest one hour concentration recorded by the CEMS each month is reported to assure compliance with the one hour average limit. Mass emissions are calculated with CEMS data to assure compliance with the 12 month rolling average mass limit.

- A.3 Opacity is continuously monitored with a COMS. Additionally, visual tests using RM 9 can be run.
- A.4 NO<sub>x</sub> limit compliance with the 30 day rolling average limit is calculated with CEMS data. Mass emissions are calculated with CEMS data and an algorithm specified in the permit to assure compliance with the 12 month rolling average mass limit. Compliance with a related oil capacity factor limit is assured with calculations using a formula specified in the permit.
- A.5 CO limit compliance with the 30 day rolling average limit is calculated with CEMS data. Mass emissions are calculated with CEMS data to assure compliance with the 12 month rolling average mass limit.
- A.6 Volatile organic compound (VOC) limit compliance is demonstrated with two source tests per year.
- A.7 TRS limit compliance is continuously monitored with a CEMS.
- A.8 HAPS compliance is demonstrated by using particulate as a surrogate for HAPS. Opacity monitoring with a COMS to demonstrate compliant particulate emissions, as required by 40 CFR 63, is included in the AOP.

#### **B. Lime Kilns 1 & 2 - federally enforceable limits**

Emission controls at the lime kilns include a venturi scrubber on each lime kiln stack for particulate control and operational practices to control other emissions. Each lime kiln stack is equipped with a CEMS to measure TRS emissions. Monitoring to assure compliance with specific limits includes:

- B.1 Particulate limit compliance is monitored monthly with a source test. Provision for frequency reduction to quarterly is made if emissions are <75% of the limit for six consecutive months. Less frequent source testing is allowed only as long as source tests continue to demonstrate emissions are <75% of the limit. CAM is required by 40 CFR Part 64 for particulate at this unit. Compliance with the HAPS monitoring requirement discussed in section B.4 of this Support Document satisfies the CAM requirement.
- B.2 SO<sub>2</sub> limit compliance is monitored monthly with a source test. In lieu of the source test, the highest one hour concentration recorded by a CEMS may be reported to assure compliance with the one hour average limit.
- B.3. Opacity limit compliance is monitored by monitoring scrubber water flow and pressure drop as performance indicator parameters. Additionally, visual tests using RM 9 can be run.
- B.4. HAPS compliance is demonstrated by using particulate as a surrogate for HAPS. Opacity monitoring using scrubber water flow and pressure drop as performance indicators to demonstrate compliant particulate emissions, as required by 40 CFR 63, is included in the AOP.

#### **C. Smelt Tanks 4E & 4W - federally enforceable limits**

Emission controls at the smelt tanks include a wet scrubber on each smelt tank stack for particulate control and operational practices to control other emissions. Monitoring to assure compliance with specific limits includes:

- C.1 Particulate limit compliance is monitored monthly with a source test. Provision for frequency reduction to quarterly is made if emissions are <75% of the limit for six consecutive months. Less frequent source testing is allowed only as long as source tests continue to demonstrate emissions are <75% of the limit. CAM is required by 40 CFR Part 64 for particulate at this unit. Compliance with the HAPS monitoring requirement discussed in section C.3 of this Support Document satisfies the CAM requirement.
- C.2 Opacity limit compliance is monitored by monitoring scrubber parameters as performance indicators. Additionally, visual tests using RM 9 can be run.
- C.3 HAPS compliance is demonstrated by using particulate as a surrogate for HAPS. Opacity monitoring using scrubber water flow and fan amperage as performance indicators to demonstrate compliant particulate emissions, as required by 40 CFR 63, is included in the AOP. Fan amperage is measured instead of pressure drop because the scrubber type used does not rely on pressure drop for particulate removal.

#### **D. Power Boiler 6 - federally enforceable limits**

Power boiler 6 is an older oil and gas-fired boiler operated on an as needed basis. Operational practices are used to control emissions. Compliance monitoring requirements consider both the age of the boiler and the limited operating time. Monitoring to assure compliance with specific limits includes:

- D.1 Particulate limit compliance is monitored with source tests. Source test frequency is dictated by the fuel used and the time period operated.
- D.2 Opacity limit compliance is monitored by visual observation tied to periods of unit operation. Visual tests are conducted using RM 9.
- D.3 SO<sub>2</sub> limit compliance is demonstrated with fuel receipts specifying fuel oil sulfur content.

#### **E. Power Boiler 7 - federally enforceable limits**

Emission controls at power boiler 7 include an ESP for particulate control and operational practices to control other emissions. The stack is equipped with continuous emission monitoring system (CEMS) units to measure nitrogen oxides (NO<sub>x</sub>) and carbon monoxide (CO) emissions. Also, a continuous opacity monitoring system (COMS) on the stack measures opacity. Monitoring to assure compliance with specific limits includes:

- E.1 Particulate limit compliance is monitored quarterly with a source test. Compliance assurance monitoring (CAM) is also required for this parameter at this unit by 40 CFR Part 64. Compliance with the CAM requirement is demonstrated with opacity monitoring specified in condition E.1a of the AOP.

- E.2 Opacity is continuously monitored with a COMS. Additionally, visual tests using RM 9 can be run.
- E.3 NO<sub>x</sub> limit compliance with the 30 day rolling average limit is calculated with CEMS data. Mass emissions are calculated with CEMS data to assure compliance with the 12 month rolling average mass limit.
- E.4 SO<sub>2</sub> limit compliance with the 30 day rolling average limit and rolling average mass limit are calculated based on fuel oil sulfur concentration.
- E.5 CO limit compliance with the 30 day rolling average limit is calculated with CEMS data. Mass emissions are calculated with CEMS data to assure compliance with the 12 month rolling average mass limit.
- E.6 VOC limit compliance is demonstrated with two source tests per year.

#### **F. Causticizer Slaker Vent - federally enforceable limits**

This is a relatively small source. Particulate limit compliance is monitored with a source test when requested by Ecology. The Permittee earlier demonstrated that the source complies with the particulate standard even with the wet scrubber not operating. Ecology considers operating the scrubber to be part of good operations and maintenance.

#### **G. State only requirement – no federally enforceable limits**

#### **H. Industrial Stack Sources - federally enforceable limits**

This is a cumulative daily mass particulate matter less than 10 microns (PM<sub>10</sub>) limit for mill sources specified in Order DE 95AQ-I006. Compliance is demonstrated using the calculation specified in the order and included in Appendix C of the AOP.

#### **I. Compliance Assurance Monitoring (CAM) - federally enforceable limits**

CAM monitoring requirements are applicable for particulates at Recovery Furnace No. 4, Smelt Tank Vents 4E and 4W, Lime Kilns 1&2, and Power Boiler No.7. MACT 2 monitoring requirements for Recovery Furnace No. 4, Smelt Tank Vents 4E and 4W, and Lime Kilns 1&2 satisfy the requirements for CAM. Power Boiler 7 monitoring to provide CAM is met with the requirements of condition E.1a.

#### **J - O. MACT Requirements - federally enforceable limits**

Maximum achievable control technology (MACT) requirements in effect for non-condensable gas collection systems, pulping process condensates, and bleaching systems are included. Future requirements for non-condensable gas collection systems and power boilers are identified.

#### **Facility-Wide General Requirements**

The Environmental Protection Agency (EPA) requested some changes to the facility wide general requirements included in the previous AOP. Changes varied in degree from eliminating

some conditions or parts of conditions to minor changes in wording. The general conditions in the current version of the AOP reflect those changes.

## **II. Insignificant Emission Units**

The facility-wide general requirements apply to the whole facility, including insignificant emission units and activities (IEUs), as required by the operating permit rule. The rule states, however, that IEUs are not subject to monitoring requirements unless the generally applicable requirements in the State Implementation Plan (SIP) impose them. [WAC 173-401-530(2)(c)]. The Washington SIP does not impose any specific monitoring-related requirements for the facility-wide requirements for IEUs at this source. The permit, therefore, does not require any testing, monitoring, reporting, or recordkeeping for insignificant emission units or activities.

## **III. Regulatory Orders**

The permittee is currently subject to several regulatory orders. Copies of the orders are included in Appendix F of the AOP.

An important issue regarding any AOP is the basis of authority for the applicable requirements. This is particularly true of monitoring and reporting requirements. The basis of authority is used to determine federal or state-only applicability. Many of the applicable requirements come from orders issued by Ecology. With the permittee's agreement, the issue of state-only or federal applicability was put aside as it was agreed to rely entirely on WAC 173-401-615 as the basis of authority for the type and frequency of monitoring. WAC 173-401-615 requires monitoring and recordkeeping sufficient to assure compliance with the terms and conditions of the permit. This regulation is federally enforceable. Monitoring and recordkeeping requirements based on this regulation are federally enforceable.

## **APPENDIX A - ACRONYMS USED IN THE SUPPORT DOCUMENT**

ADUT/D - air dried unbleached tons per day

AOP - air operating permit

CFR - code of federal regulations

CAM - compliance assurance monitoring

CEMS - continuous emission monitoring system

CO - carbon monoxide

COMS - continuous opacity monitoring system

EPA - Environmental Protection Agency

ESP - electrostatic precipitator

HAPS - hazardous air pollutants

IEUs - insignificant emission units and activities

MACT - maximum achievable control technology

NO<sub>x</sub> - nitrogen oxides

OCC - old corrugated cardboard

PM<sub>10</sub> - particulate matter less than 10 microns

PSD - prevention of significant deterioration

RM - reference method

Simpson - Simpson Tacoma Kraft Company, LLC

SIP - state implementation plan

SO<sub>2</sub> - sulfur dioxide

TRS - total reduced sulfur

VOC - volatile organic compound

WAC - Washington Administrative Code

## **APPENDIX B - RESPONSE TO COMMENTS**

No comments were submitted.

Two minor changes were made to the draft AOP sent for public comment as a result of internal Ecology review.

1. Minor spelling errors were corrected.
2. References in the draft AOP to WAC 173-400 concerning MACT were updated. The reference to MACT in the 7/11/02 update of WAC 173-400 was WAC 173-400-075(5). The reference to MACT in the 1/10/05 update of WAC 173-400 is WAC 173-400-075(6).

The draft AOP cited WAC 173-400-075(5). The AOP cites WAC 173-400-075(6).